

Remarks

The Office Action mailed July 6, 2009 has been received and reviewed. No claims having been amended or canceled herein, and claims 30-33 having been added herein, the pending claims are claims 15-33.

New claims 30-33 are supported by the specification at, for example, page 16, lines 5-10.

Reconsideration and withdrawal of the rejections are respectfully requested.

Interview Summary

Applicants thank Patent Examiner Michael Pepitone and Supervisory Patent Examiner Mark Eashoo for granting Applicants' Representative, Loren D. Albin, a telephone interview on October 22, 2009. Applicants hereby acknowledge that the Interview Summary mailed by the Examiners on October 28, 2009 represents a complete and accurate summary of the interview.

Provisional Objection to the Claims under 37 C.F.R. §1.75

The Examiner advised that should claim 15 be found allowable, claim 28 would be objected to under 37 C.F.R. §1.75 as being a substantial duplicate thereof. The Examiner also advised that should claim 21 be found allowable, claim 29 would be objected to under 37 C.F.R. §1.75 as being a substantial duplicate thereof. Applicants respectfully traverse the provisional objections.

"[W]hen two claims in an application are duplicates, or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other claim under 37 CFR 1.75 as being a substantial duplicate of the allowed claim" (M.P.E.P. §706.03(k)). Applicants respectfully submit that claims 15 and 28 do not cover the same thing, and thus, are not substantial duplicates.

For example, both claims 15 and 28 recite, among other things, that component Z2 includes at least one compound having only one (1) aziridino group. Because, during patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification (*see, for example*, M.P.E.P. §2111), component Z2 must be interpreted

during patent examination (in both claims 15 and 28) as including at least one compound having only one (1) aziridino group, and optionally one or more additional compounds having, for example, two, three, or four aziridino groups.

Claim 15 recites that *at least one compound according to component Z2* (e.g., a compound having only one (1) aziridino group, or optionally one or more additional compounds having, for example, two, three, or four aziridino groups) differs, in its chemical make-up, from at least one compound according to component Z1. Thus, during patent examination, the broadest reasonable interpretation of claim 15, consistent with the specification, is that the at least one compound according to component Z2 that differs from at least one compound according to component Z1, *can be, for example, a compound having only one (1) aziridino group, a compound having two aziridino groups, a compound having three aziridino groups, or a compound having four aziridino groups.*

In contrast, claim 28 recites that the at least one compound having only one aziridino group differs, in its chemical make-up, from at least one compound according to component Z1. Thus, during patent examination, the broadest reasonable interpretation of claim 28, consistent with the specification, is that the at least one compound according to component Z2 that differs from at least one compound according to component Z1, *must be a compound having only one (1) aziridino group.*

For at least this reason, Applicants respectfully submit that claims 15 and 28 do not cover the same thing, and thus, are not substantial duplicates. For similar reasons, Applicants respectfully submit that claims 21 and 29 do not cover the same thing, and thus, are not substantial duplicates.

Reconsideration and withdrawal of the provisional objections to the claims are respectfully requested.

Rejections under 35 U.S.C. §103(a)

The Examiner rejected claims 15-29 under 35 U.S.C. §103(a) as being unpatentable over Zech et al. (WO 01/17483; hereinafter Zech et al. '483), with U.S. Patent No. 6,894,144 (Zech et

al. '144) being used as the English language translation of Zech et al. for examination purposes. Applicants respectfully traverse the rejection.

The Examiner acknowledged that "Zech *et al.* does not disclose an embodiment containing a mixture of polyether compounds which carry at least two aziridino groups {corresponding to instant formula Z1} and only 1 aziridino group {corresponding to instant formula Z2}" (Office Action mailed July 6, 2009 at page 4, lines 3-5; page 6, lines 20-22; page 8, lines 1-3; and page 9, lines 4-6).

However, the Examiner alleged a motivation to modify Zech et al. as follows:

[A]t the time of invention a person of ordinary skill in the art would have found it obvious to utilized a mixture of polyether compounds which carry at least two aziridino groups {corresponding to instant formula Z1} and only 1 aziridino group {corresponding to instant formula Z2} in a dental impression material based on the invention of Zech *et al.*, and would have been motivated to do so since Zech *et al.* suggests that N-alkylaziridino compounds having aziridino equivalent masses being able to be varied from 500 to 25000 g/equivalent and the number of N-alkylaziridino groups being able to be varied between 1 {corresponding to instant formula Z2} and 4 {corresponding to instant formula Z1} are useful as constituent (D) of the base component" (Office Action mailed July 6, 2009 at page 4, lines 5-12; page 6, line 22 to page 7, line 8; page 8, lines 3-11; and page 9, lines 6-14).

Applicants disagree, and respectfully submit that the Examiner's arguments amount to nothing more than an allegation that it *might have been possible* for one of skill in the art to modify Zech et al. *if, one of skill in the art, did in fact have motivation* to modify Zech et al. In fact, Applicants respectfully submit that one of skill in the art would not reasonably have had motivation to modify Zech et al. in the manner suggested by the Examiner, as further discussed herein below.

The present specification explains that "[t]he problem of the present invention was accordingly to make available dental materials based on aziridino polymers which are

distinguished by *accelerated curing* whilst still having an *adequate processing time* (open time). A further problem of the invention was, especially, to make available dental materials based on aziridino polymers which, in comparison to the dental materials known from the prior art, *reach high values of Shore A hardness more quickly*, whilst the completely cured materials have Shore A hardnesses which are located within a desired range and are substantially the same as in the case of the dental materials known from the prior art." (Page 2, line 30 to page 3, line 7 of the present specification; emphasis added).

As discussed in the present specification, there are numerous rational approaches that one of skill in the art might pursue to solve this problem (e.g., to achieve the desired setting pattern).

For example, one of skill in the art might attempt to solve this problem by *modifying the initiator*, as suggested by Zech et al. at column 5, lines 40-43 (stating that "[t]o achieve specific mechanical properties or to achieve *a desired setting pattern*, it can be expedient to use combinations of boric acid complexes with varying structure and composition;" emphasis added).

To further modify the desired setting pattern, additionally or alternatively, one of skill in the art might attempt to use curing-retarding compounds, as suggested by Zech et al. at column 7, lines 8-13 (stating that "[t]o establish the desired setting pattern, the preparations according to the invention according to constituent (C) or (F) can contain at least one *curing-retarding compound*. In principle, amine or alkaline substances retard the curing of the N-alkylaziridino compounds and can be used for this purpose;" emphasis added).

Thus, the Examiner has not shown that there are a finite number of predictable solutions to solve the problem of accelerated curing.

Further, Applicants could find no suggestion in Zech et al. for solving this problem (e.g., to achieve accelerated curing) by using a combination of aziridino compounds (component Z1 and component Z2). Moreover, Applicants respectfully submit that the Examiner has not presented a convincing line of reasoning as to why one of skill in the art would have viewed using a combination of aziridino compounds (component Z1 and component Z2) as a *predictable*

solution to achieve accelerated curing. Although the exact mechanism of the hardening reaction is unknown, Applicants respectfully submit that one of skill in the art would not reasonably predict that adding component Z2, which includes a monofunctional compound (i.e., having fewer reactive groups per molecule than difunctional or higher functionality components) to component Z1, which includes an at least difunctional component, would lead to accelerated curing.

Surprisingly, the Examples of the present specification show that when adding even small amounts of component Z2, the Shore A hardness (measured after 10 minutes) is generally higher, while the final Shore A hardness (measured after 24 hours) remains substantially the same. *See, for example*, Tables 1, 2, 4, 5, 6, and 7 on pages 29-33 of the present specification. Thus, by using component Z2, the setting reaction can be accelerated without negatively affecting the desired final properties.

For at least these reasons, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of unpatentability for claims 15-29 being obvious over Zech et al. '483. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

New Claims

New claims 30, 31, 32, and 33 depend from claims 15, 21, 28, and 29, respectively, and further recite an amount of component Z2 that is about 0.4% by weight to about 25% by weight, based on the total weight of components Z1 and Z2. Applicants respectfully submit that new claims 30-33 are patentable for at least the reasons discussed herein above for the patentability of claims 15, 21, 28, and 29. Further, Applicants respectfully submit that one of skill in the art would lack the motivation to modify Zech et al. '483 to include the recited amounts of component Z2.

Entry and consideration of new claims 30-33 are respectfully requested.

Amendment and Response

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Summary

It is respectfully submitted that all the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

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CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted via the U.S. Patent and Trademark Office electronic filing system in accordance with 37 CFR §1.6(a)(4) to the Patent and Trademark Office addressed to the Commissioner for Patents, Mail Stop **Amendment**, P.O. Box 1450, Alexandria, VA 22313-1450, on this 6th day of November, 2009.

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